

PIECHOCKI, W.

The problem of the nonsteady state surface nucleus of thermoelastic strain in an infinite elastic body with a spherical cavity. Bul Ac Pol tech 8 no.1:1-4 '60. (EEAI 9:7)

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences. Presented by W. Nowacki.  
(Elasticity)

82114

P/006/60/008/01/02/C03

AUTHOR:  
186200

Piechocki, Wladyslaw

TITLE:

Thermoelastic Analysis of a Circular Disc 26

PERIODICAL: Rozprawy Inżynierskie, 1960, Vol 8, No 1 pp 93 - 100

TEXT: The effect of the time-variable heat sources on a circular disc with free and clamped edges is analyzed. To satisfy the edge conditions of the analyzed disc, Poisson's equation and Airy's stress function are applied. Bessel functions of the first kind are set up expressing the elastic quantities involved. There are 2 references: 1 English and 1 German.

ASSOCIATION: Zakład Mechaniki Ośrodków Ciągłych IPPT PAN (Institute of Continuous Media Mechanics of the IPPT PAN)

SUBMITTED: May 30, 1959

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1327, 2808, 2807

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P/033/60/012/002/000/002  
D214/D3C1

AUTHORS: Piechocki, Władysław, and Ignaczak, Józef (Ignasz)

TITLE: Some problems of dynamic distortion in thermoelasticity

PERIODICAL: Archiwum mechaniki stosowanej, v. 12, no. 2, 1980,  
259 - 278

TEXT: The problems of dynamic thermal distortion considered here are those of a temperature field discontinuous in space and time. By analogy with a static case, a non-steady state nucleus of thermoelastic strain which may be surface, linear, or point nucleus, is introduced and it means that in a body of volume  $V$  the temperature distribution has the form

$$T^*(x_i, \xi_i; t) = \delta(x_i - \xi_i) \delta(t), \quad (0.4)$$

where  $\delta = \delta(x)$  is the Dirac function, knowledge of the solution

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Some problems of dynamic ...

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denoted by  $[S^*(x_i, \xi_i; t)]$  of the dynamic problem for a non-steady state nucleus enables one to obtain the solutions for any other temperature distribution  $T = T(x_i, t)$  from

$$[S(x_i, t)] = \int_0^t d\tau \int_V [S^*(x_i, \xi_i; t - \tau)] T(\xi_i; \tau) dV(\xi_i). \quad (0.5)$$

The problems considered here are point symmetric for the elastic sphere and the infinite body with a spherical cavity. For the case of a non-steady state nucleus of thermoelastic strain distributed over a spherical surface in an infinite body, the temperature distribution has the form

$$T(r, r_0; t) = \delta(r - r_0) \delta(t), \quad (1.1)$$

where  $\delta = \delta(r)$  is the Dirac function. For a temperature field discontinuous in time the authors obtain

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$$\begin{aligned}
 ) - \frac{2}{\theta_0 c_1} \frac{r}{r_0} \chi(r, r_0; t, t^*) &= - \frac{2}{\theta_0 c_1} \frac{r}{r_0} \int_0^r \phi(r, r_0; t-\tau) d\tau = \\
 &= \left\{ t^* \left[ \eta \left( t - t^* - \frac{r_0 - r}{c_1} \right) - \eta \left( t - t^* - \frac{r_0 + r}{c_1} \right) \right] + \right. \\
 &\quad \left. + \left( t - \frac{r_0 - r}{c_1} \right) \eta \left( \frac{r_0 - r}{c_1} + t^* - t \right) - \left( t - \frac{r_0 + r}{c_1} \right) \eta \left( \frac{r_0 + r}{c_1} + t^* - t \right) \right\} \eta(r_0 - r) + \\
 &\quad + \left\{ t^* \left[ \eta \left( t - t^* - \frac{r - r_0}{c_1} \right) - \eta \left( t - t^* - \frac{r + r_0}{c_1} \right) \right] + \right. \\
 &\quad \left. + \left( t - \frac{r - r_0}{c_1} \right) \eta \left( \frac{r - r_0}{c_1} + t^* - t \right) - \left( t - \frac{r + r_0}{c_1} \right) \eta \left( \frac{r + r_0}{c_1} + t^* - t \right) \right\} \eta(r - r_0).
 \end{aligned} \tag{1.23}$$

The Eq. (1.23) may be interpreted as follows: During the period  $0 < t < t^*$  an infinite elastic body containing the spherical surface  $r = r_0$  was heated to a constant temperature, the sphere having

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ing a coefficient of thermal dilatation other than the surrounding medium, the elastic properties being the same. If, in the region of the spherical shell  $r_1 < r < r_2$  there exists an inclusion of a, different coefficient of thermal dilatation from that of the surrounding body, and if the entire body is heated to a uniform temperature during the period  $0 < t_1^* \leq t \leq t_2^*$  then the function determining the dynamic distortion for the passage across the region of the insert is given by the equation

$$\varphi_i^0(r, t; r_1, r_2; t_1^*, t_2^*) = \int_{r_1}^{r_2} [\chi(r, r_0; t, t_1^*) - \chi(r, r_0; t, t_2^*)] dr_0, \quad (1.24)$$

where the function  $\chi$  is determined by the Eq. (1.23). It is therefore seen that knowledge of the function  $\chi$  enables the determination of the displacement fields and thermal stress waves for both continuous and discontinuous point-symmetric variability of the temperature field. The function  $\chi$  may be called a point-symmetric

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function of dynamic thermal distortion in an infinite elastic body.  
 Two cases with a finite boundary are considered. For the spherical  
 elastic body  $0 < r < a$  we have

$$\frac{\phi^*}{4\pi r_0^2} = -\frac{\theta_0}{4\pi} \left[ \frac{\operatorname{sh} \zeta s}{\zeta s} \frac{e^{-\zeta s}}{r_0} \eta(r_0 - r) + \frac{\operatorname{sh} \zeta s_0}{\zeta s_0} \left( \frac{e^{-\zeta s}}{r} \eta(r - r_0) - 2 \frac{\operatorname{sh} \zeta s}{\tau} \frac{\varphi(\zeta) e^{-\zeta s}}{1 - \varphi(\zeta) e^{-\zeta s}} \right) \right], \quad (2.2)$$

where:  $\zeta = k, a$ ;  $s = r/a$ ;  $s_0 = r_0/a$  and the function  $\varphi(z)$  is a rational function of the variable  $z$ .

$$\varphi(\zeta) = [(\zeta + 2x^2)^2 + 4x^2(1-x^2)]/[(\zeta - 2x^2)^2 + 4x^2(1-x^2)] \quad (2.3)$$

$$x^2 = c_2^2/c_1^2, \quad 0 < x^2 < 1.$$

here the nucleus of thermo-elastic strain was assumed to appear on the surface  $r = r_0$  inside the solid sphere at  $t = 0$ , and for

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the spherical cavity in the infinite body when the region  $r > r_0 + a$  is considered and it is assumed that a nucleus appeared on the surface of the sphere  $r = r_0 + a$  which is free from stress, at  $t = 0$ .

Finally a surface nucleus varying periodically in the neighborhood of the spherical cavity has the potential function given by

$$\begin{aligned} -\frac{\Phi e^{-i\omega t}}{\theta_0 r_0^3} &= \frac{\operatorname{sh} h_1 r}{h_1 r} \frac{e^{-h_1 r}}{r_0} \eta(r_0 - r) + \frac{\operatorname{sh} h_1 r_0}{h_1 r_0} \frac{e^{-h_1 r}}{r} \eta(r - r_0) - \\ &- \frac{1}{2 h_1 r_0 r} \left[ \frac{1}{g(h_1 a)} e^{-h_1 a(s+z_0 - z)} - e^{-h_1 a(s+z_0)} \right], \quad h_1 = i\omega/c_1. \end{aligned} \quad (4.7)$$

There are 19 references: 5 Soviet-bloc and 14 non-Soviet-bloc. The four most recent English-language references read as follows: E. Sternberg and E.L. McDowell, On the steady state thermo-elastic problem for the half-space. Quart. Appl. Math. 4, 14, 1957, 381-398; In.N. Sneddon, F.J. Lockett, On the Steady-State Thermoelastic Problem for the Half Space and the Thick Plate, Quart. Journ. appl. Math., Brown University in press., 1959; E. Sternberg and

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Some problem of dynamic ...

J.G. Chakravorty, Thermal Shock in an Elastic Body with a Spherical Cavity. Quart. Appl. Math. 2, 17, 1949, E. Sternberg, Transient Thermal Stresses in an Infinite Medium with a Spherical Cavity, Proc. Kon. Ned. Akad. Wetensch., 5 B, 60, 1951, '9-49.

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP,  
Polish Academy of Sciences

SUBMITTED: November 20, 1959

Card 7/7

26621  
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D242/D301

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AUTHOR: Piechocki, Włodzimierz (Warsaw)

TITLE: Axisymmetric dynamic problem of thermoelasticity for a solid sphere

PERIODICAL: Archiwum mechaniki stosowanej, v. 12, no. 4, 1960,  
553 - 561

TEXT: The purpose of the study was to consider the dynamic problem of thermoelasticity for a solid sphere, the state of stress being due to the action of a concentrated heat source varying harmonically in time. A source of intensity  $q e^{i\omega t}$  is situated at a point  $(a', 0, 0)$  inside a sphere of radius  $a$ . The surface of the sphere is maintained at zero temperature. The solution is in two parts,  $T_1$  and  $T_2$ , where  $T_1$  represents the wave system diverging from the source, and  $T_2$  denotes the wave system generated inside the sphere after one or more reflections from the spherical boundary  $r = a$ .

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Axisymmetric dynamic problem ...

The additional theorem for cylindrical functions is used to express the wave system diverging from the source as one which diverges from the sphere center.  $T_1$  and  $T_2$  are given by

$$T_1(r, \theta; t) = \frac{q}{2\pi x} \frac{e^{i\omega t}}{(ra')^{1/2}} \sum_{n=0}^{\infty} \left( n + \frac{1}{2} \right) K_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} r \right) \times \\ \cdot I_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} a' \right) P_n(\cos \theta) \quad (r > a'). \quad (3)$$

$$T_2(r, \theta; t) = \frac{q}{2\pi x} \frac{e^{i\omega t}}{(ra')^{1/2}} \sum_{n=0}^{\infty} \left( n + \frac{1}{2} \right) K_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} a' \right) \times \\ \cdot I_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} a' \right) \frac{I_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} r \right)}{I_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} a \right)} P_n(\cos \theta) \quad (0 \leq r \leq a) \quad (4)$$

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Axisymmetric dynamic problem ...

and the complete solution by

$$T = T_1(r, \theta; t) - T_2(r, \theta; t). \quad (5)$$

$I_n(z)$  and  $K_n(z)$  are the modified Bessel functions,  $P_n(\cos \theta)$  are the Legendre polynomials, and  $q$  is the quantity of heat per unit time. The stress waves produced by the temperature field  $T$  have the equation of motion for infinitesimal displacements

$$\mu \nabla^2 \bar{u} + (\mu + \lambda) \operatorname{grad} \operatorname{div} \bar{u} - (3\lambda + 2\mu)\alpha_t \operatorname{grad} T = \rho \ddot{u} \quad (6)$$

where  $\bar{u}$  denotes the displacement vector,  $\lambda, \mu$  are the Lamé constants and  $\alpha_t$  is the coefficient of thermal expansion. The boundary condition is  $\bar{p} = 0$  (7) where  $\bar{p}$  is the stress vector on the sphere  $r = a$ . A particular solution of the field equation is

$$\bar{u}^0 = \operatorname{grad} \bar{T}^0. \quad (8)$$

$$\text{The complete solution is } [S] = [S^0] + [S^*] \quad (9)$$

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Axisymmetric dynamic problem ...

where  $[S^0]$  is a particular solution of the field equation generated by the potential thermoelastic displacement  $\tilde{u}_1^0(r, \theta, t)$  and  $[S^*]$  is the solution of the "residual problem" implicit in the last equation.  $\tilde{u}_1^0$  is given by

$$(10) \quad \phi_1^0(r, \theta; t) = -\frac{Ae^{i\omega t}}{(ra')^{1/2}} \sum_{n=0}^{\infty} \left( n + \frac{1}{2} \right) \left[ K_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} r \right) I_{n+1/2} \left( \sqrt{\frac{i\omega}{x}} a' \right) - K_{n+1/2} \left( \frac{i\omega}{c_l} r \right) I_{n+1/2} \left( \frac{i\omega}{c_l} a' \right) \right] J_n(\cos \theta), \quad (10)$$

where

$$A = \frac{\theta_0 q}{2\pi x(h_1^2 - h_2^2)}, \quad \theta_0 = \frac{1+r}{1-r} a_l, \quad r = \text{Poisson ratio},$$

$$h_1^2 = \frac{i\omega}{x}, \quad h_2^2 = \left( \frac{i\omega}{c_l} \right)^2.$$

By considering a change in sign on reflection at the sphere boundary

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Axisymmetric dynamic problems ...

dary the reflected wave system is given by

$$\theta_2^0 = \frac{A e^{i\omega t}}{(ra')^{1/2}} \sum_{n=0}^{\infty} \left( n + \frac{1}{2} \right) \cdot$$

$$\left[ K_{n+1/2} \left( \left| \frac{i\omega}{c} a \right| \right) I_{n+1/2} \left( \left| \frac{i\omega}{c} a' \right| \right) \frac{I_{n+1/2} \left( \left| \frac{i\omega}{c} r \right| \right)}{I_{n+1/2} \left( \left| \frac{i\omega}{c} a \right| \right)} \right] \quad (12)$$

$$K_{n+1/2} \left( \frac{i\omega}{c} a \right) I_{n+1/2} \left( \frac{i\omega}{c} a' \right) \frac{I_{n+1/2} \left( \frac{i\omega}{c} r \right)}{I_{n+1/2} \left( \frac{i\omega}{c} a \right)} \left[ v_n (\cos \theta) - (0 - r - a) \right]$$

The solution for  $[S^*]$  is derived from

$$\mu^{-1/2} \bar{u}^* + (\mu + \epsilon) \operatorname{grad} \operatorname{div} \bar{u}^* = \bar{u}^* \quad (17)$$

and the equations

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## Axisymmetric dynamic problems

$$\nu^2 v_1^* + k_1^2 v_1^* = 0, \quad \operatorname{curl} v_1^* = 0, \quad k_1^2 = \left(\frac{\omega}{c_l}\right)^2, \quad (20.1)$$

$$\nu^2 v_2^* + k_2^2 v_2^* = 0, \quad \operatorname{div} v_2^* = 0, \quad k_2^2 = \left(\frac{\omega}{c_t}\right)^2, \quad (20.2)$$

are obtained, where  $c_l$  and  $c_t$  are the velocities of the longitudinal and transverse waves. The components of the stress tensor are related to displacements by

$$(28) \quad \begin{cases} \sigma_{rr}^* = \lambda \operatorname{div} u^* + 2\mu u_{,r}^{*(r)}, \\ \sigma_{\theta\theta}^* = \lambda \operatorname{div} u^* + 2\mu (u_{,r}^{*(r)} + u_{,\theta}^{*(\theta)}) r^{-1}, \\ \sigma_{\varphi\varphi}^* = \lambda \operatorname{div} u^* + 2\mu (u_{,r}^{*(r)} + u_{,\theta}^{*(\theta)} \operatorname{ctg} \theta) r^{-1}, \\ \sigma_{rr}^* = \mu (u_{,r}^{*(r)} - r^{-1} u_{,\theta}^{*(\theta)} + r^{-1} u_{,\theta}^{*(r)}). \end{cases} \quad (28)$$

where

$$\operatorname{div} u^* = u_{,r}^{*(r)} + r^{-1} (2 u_{,r}^{*(r)} + u_{,\theta}^{*(\theta)} + u_{,\theta}^{*(r)} \operatorname{ctg} \theta).$$

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Axisymmetric dynamic problem ...

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D242/D301

The surface harmonics are obtained from the boundary conditions. There are 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: E. L. McDowell and E. Sternberg, Axisymmetric thermal stresses in a spherical shell of arbitrary thickness, J. appl. Mech., 3, 24, 1957; J. Ignaczak, Dynamic thermoelastic problem of a spherical Cacity, Arch. Mech. stos., 4, 11, 1959, 399-408; G. Green, On some problems in the conduction of heat, Phil. Mag., 1931; W. Nowacki, A dynamical problem of thermoelasticity, Arch. Mech. stos., 3, 9, 1957, 319-324.

ASSOCIATION: Department of Mechanics of Continuous Media, IBTP  
Polish Academy of Sciences

SUBMITTED: May 20, 1960

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PIECHOCKI, Wladyslaw

Analysis of finite deflections of a slightly spherical entrance loaded locally. Mechanika stresow & no.2:45-52 '52.

1. Department of Mechanics of continuous Media of the Institute of Basic Technical Problems of the Polish Academy of Sciences, Warsaw. Submitted January 30, 1964.

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Puchalski and M. Luszczynski, 1962, *Nauk. Akad. Roln.* 12, 1-  
61, 61, 92, 1962. The geology of a newly opened  
gas oil well is given. The oil, found at 615 m., has a  
petroleum base, which splits into gasoline with a m.p.  
of 48°. This oil showed 21.4% gasoline, 6.6% kerosene,  
46.47% oil, 1.21% tar. The gas/oil ratio is 100:  
10. The oil has 1.86 sp. gr. and a density of 0.86.  
The pressure of the gas is 25 atm. and that of the oil is 1.5  
atm. with an average pressure of 1.3 atm. The output  
in the first, second and third year was 10, 15 and 10 ton  
daily, with a gas/oil ratio of 1.8, 1.5 and 1.1, resp. A  
description of the methods used to increase production is  
given.

~~REF ID: A6512~~  
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V-2

Abs Jour : Ref Zhur - Biol., No 2, 1958, 8349

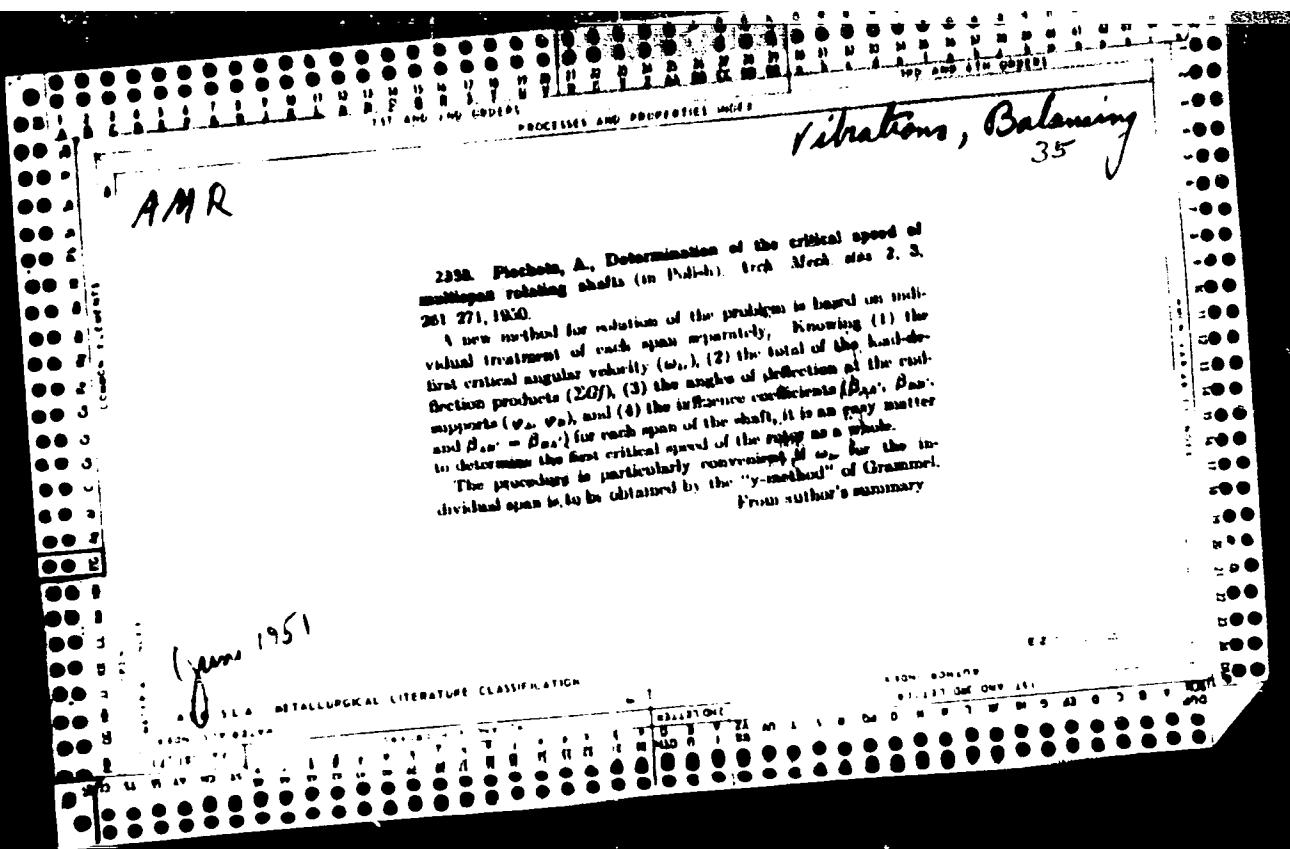
Author : Janina Piechoska  
Inst :

Title : The Chemical Composition of the Bog Bilberry Vaccinium uliginosum L. The Vitamin C Content of Berries Kept in the Refrigerator.

Orig Pub : Roczn. Panstw. zakl. hig. 1957. 8, No 3, 269-275

Abstract : No abstract.

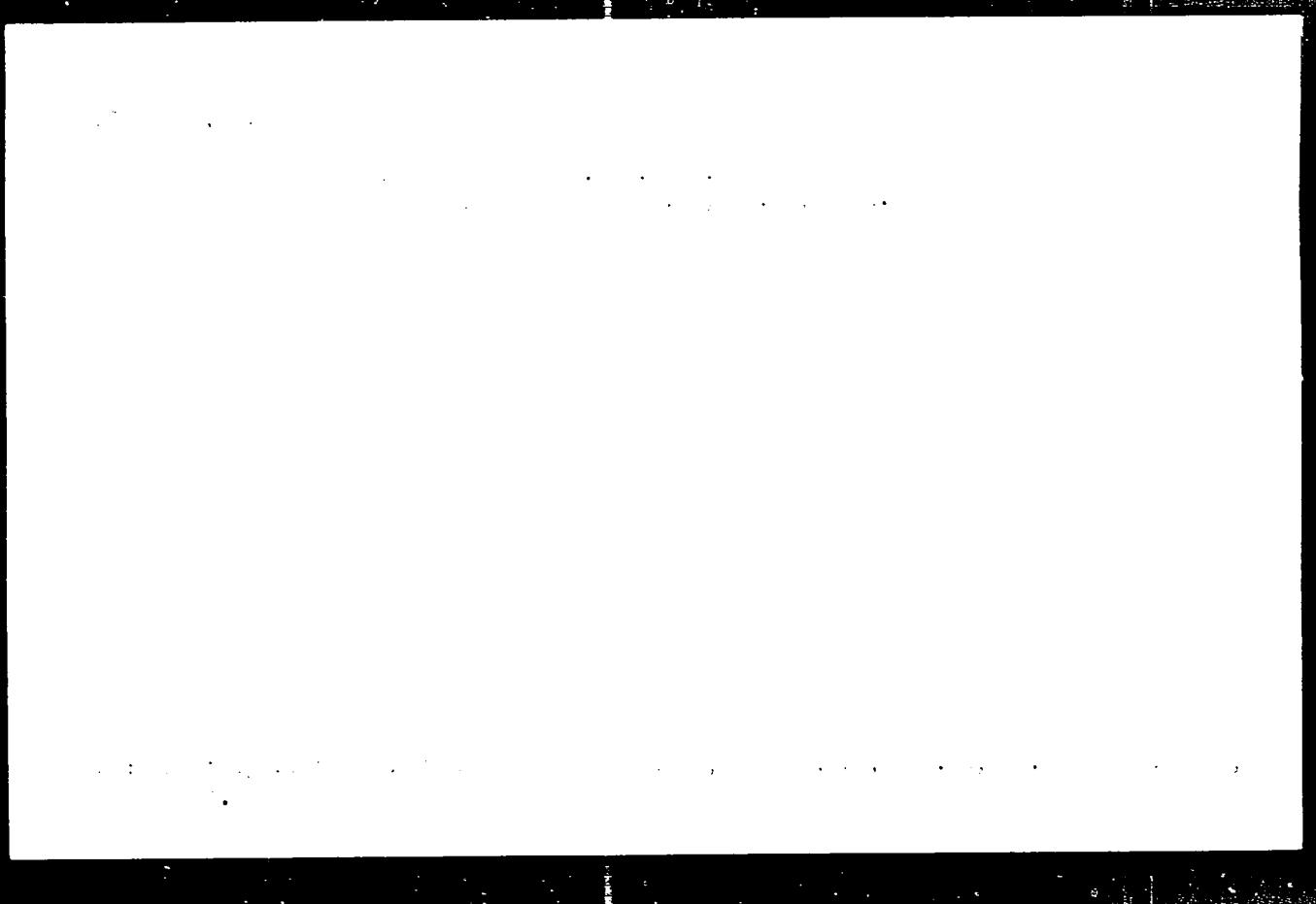
Card 1/1



PIECHOTA, Andrzej, mgr inz.

On the appropriate description of patents. Przegl metr. 24 z. 11  
315-316 25 My '65.

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408



APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

PIECHOTA, A.

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Trends in automatic control of combustion power plants on ships with particular consideration of distant steering of the main engines. Pt. 1. Pub okretowe Warszawa 9 no. 7:246-248 J1 '64.

1. Research Center of the Shipbuilding Industry, Central Ship Design Office No. 1., Gdansk (for Piechota). 2. Technical University, Gdansk (for Stalinski).

PIECHOTA, Andrzej, mgr inz.; STALINSKI, Janusz, doc. mgr inz.

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1. Research Center of the Shipbuilding Industry, Central Ship Design Office No. 1., Gdansk (f'r Piechota). 2. Technical University, Gdansk (f'r Stalinski).

PiECKOTA, ANDRZEJ

Teoria Wyważania Wiertników Nicodm-  
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English and Russian

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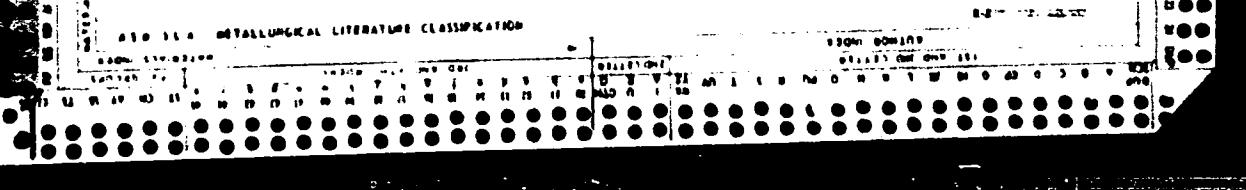
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"Wapoobremienie w układzie lopatkowym turbin parowych i spa-  
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3 tabs

Short classification of turbine damage, caused by vibration  
of blade system Forces producing vibration. Calculation of the natural  
period of vibration of the rotor blades. Correct construction of blade  
assembly with regard to the dynamic phenomena capable of  
causing serious damage. A method of evaluating the danger of the  
blade resonance, and discussion on the forces causing it. Construc-  
tional factors leading to the correct solution of the problem of  
blade assembly from the dynamic point of view

THE POSSIBILITY OF DESULPHURIZATION OF CAST IRON WITH MANGANESE DERIVED FROM BLAST-FURNACE SLAG. A. Pleschota. (Przeglad Chemiczny, 1947, vol 6, pp 143-144; Chemical Abstracts, 1948, vol 42, Aug. 10, col 5390). Sulphur present in blast-furnace slag combines with manganese provided the manganese content is large enough to bind the whole amount of sulphur. In the presence of a small amount of manganese, sulphur combines with calcium and aluminium. The acidity or alkalinity of the slag has no effect on the process.



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Production of high-pressure boiler drums made of 18CrMoV9  
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1. Ferrum Steel Works.

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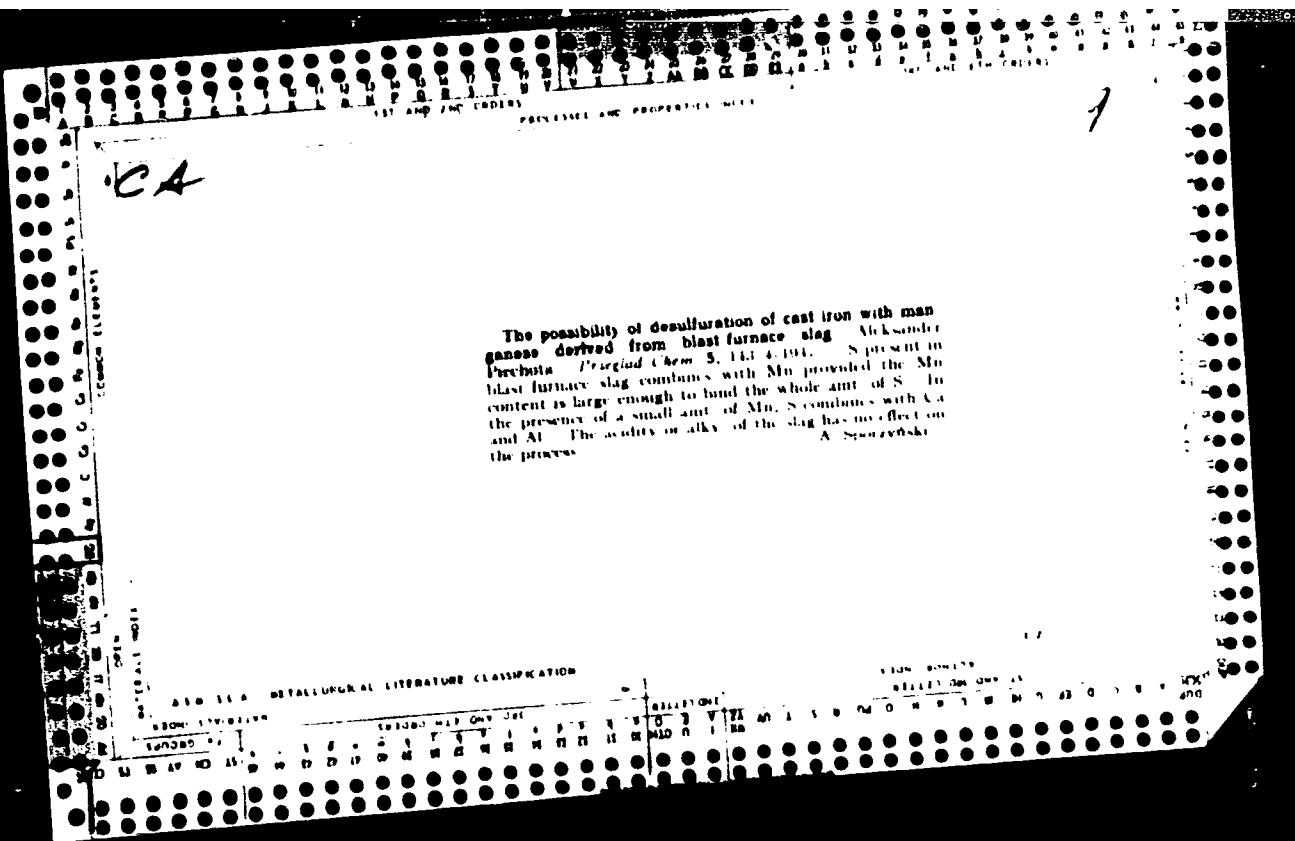
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CA

8

Influence of the substratum on the occurrence of heavy metals in the bark of contemporary pines on the Triassic of southwestern Poland Wladyslaw Bobrowski and Alicja Smidz *Precyza Panstwowa Muzeum Geol. Państwowy Inst. Geol. Nauk. geol. Polonie, Inst. geol. Polonie, Warszawa, 0-121 1649 (English summary)*: The bark of pines in areas of Pb-Zn mineralization had a rusty tint and analyses of the cleaned bark showed appreciable contents of Zn and Pb Michael Fleischer

1957



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SO: Monthly Index of East European Accessions (MAI) Vol. 7, no. 4,  
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LIECHTA, J.

How to protect the cellars of buildings against dampness. p.11.

(BUDOWNICTWO MIEJSKIE. Vol. 9, No. 6, June 1957. Warszawa, Poland)

SO: Monthly List of East European Accessions (EAA) 10, Vol. 6, No. 10, October 1958. Uncl.

MAHRBURG, Stanislaw; SZYSZKO, Janusz; SOKOLOWSKA-DEKOWA, Antonina;  
PIECHOTA, Jerzy; JUHNKE, Joachim; PACZOS-~~CHYDOROWA~~, Elzbieta

Histopathological changes in Waldeyer's ring in bronchial  
asthma in children. Otolaryng. pol. 17 no.4:428-432 '63.

1. Z Kliniki Pediatricznej AM w Lublinie (kierownik: doc.dr.  
med. A.Sokolowska-Dekowa) i z Zakladu Anatomii Patologicznej  
AM w Lublinie (kierownik: prof. dr. med. S.Mahrburg).

\*

PIECHOTA, Jerzy

Automation of voltage regulation of feeding electrofilters in  
the nonferrous metal industry. Problemy proj hut maszyn 13 no.  
1:7-14 Ja '65.

1. Biprmet, Katowice.

PINCHOTA, Jerzy; WLODARSKI, Bronislaw

Condition of the mucous membranes of the upper respiratory tract &  
ears in industrial tobacco factory workers in Lublin. Otolaryngol.  
11 no. 4:371-378 1957.

1. Z Kliniki Otolaryngologicznej A. M. w Lublinie. Kierownik: prof.  
B. Dylewski.

**(OCCUPATION DISEASES)**

ear & upper resp. tract mucous disord. in tobacco factory  
workers (Pol))

(TOBACCO, inj. eff.  
same)

(EAR, diseases  
mucous disord. in tobacco factory workers (Pol))

(RESPIRATORY TRACT, dis.  
upper mucous disord. in tobacco factory workers (Pol))

PIECHOTA, Jerzy

Remarks on the diagnostic and therapeutic use of bronchoscopy and esophagoscopy on the basis of 4 year material of the otolaryngological clinic at Lublin. Otolar.polska 9 no.2:135-148 '55.

1. Z Kliniki Otolaryngologicznej A.M. w Lublinie k: r:prof. dr  
med. B Dylewski. Lublin, Staszica 18.  
(BRONCHOSCOPY, in various diseases  
diag. & ther. use)  
(ESOPHAGOSCOPY, in various diseases  
diag. & ther. use)

GAJBIŃSKI, T.; PIECHOTA, W.; PUZIEWICZ, J.

The influence of isonicotinic acid hydrazide on experimental  
tuberculosis in guinea pigs. Gruźlica 20 no. 6:781-787 Nov-Dec  
1952. (GML 24:2)

1. Of the Clinic of Tuberculosis (Head--Drsent T. Garbinski, M.D.)  
of Wrocław Medical Academy.

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001240

四月廿二日，晴。晚晴，有風，天氣晴朗，微寒。

Yi-jen y Li-ching, "The Chinese Nationality," *Journal of Chinese Studies*, 1963, 1, 1, 1-12.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

PIECHOTE, J.

"Drainage of Land," P. 20. (BUDOWNICTWO WIEJSKIE, Vol. 6. No. 5,  
Sept./Oct. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4,  
No. 1, Jan. 1955, Uncl.

SKOWRON, H. ; TAKAOKA, N.

Crushed stone production in Poland and prospects of its development.

L. 309. (MATERYALY WILGŁAM) (Warszawa, Poland) V. 1, 19, m., st. 1982

X: Monthly Index of East European Accession (EWA) Vol. 1, No. 1, 1981

PIECHOWIAK, K.

Contemporary methods of seed-potato production in the Netherlands,  
the German Federal Republic, and Switzerland. Postepy nauk roln  
9 no.4:113-126 Jl-Ag '62.

1. Katedra Szczegolowej Uprawy Roslin, Wyższa Szkoła Rolnicza,  
Poznań.

BIRECKI, M.; GABRIEL, W.; PIECHOWIAK, K.

Summer planting of late potato varieties. Rocznik nauk rolniczych 82 no. 3:  
739-778 '61.

1. Zaklad Ziemiaka, Instytut Uprawy, Nawozenia i Gleboznawstwa, i  
Katedra Szczegolowej Uprawy Roslin, Wyższa Szkoła Rolnicza, Poznań.

PIECHOWIAK, Kazimierz

Time, density and depth of spring wheat sowing under  
Wielkopolska ecologic conditions. Roczniki wyz szkola  
... Poznan 15 181-266 '63.

1. Department of Specific Plant Cultivation, College of  
Agriculture, Poznan.

SOBIERANSKI, Stanislaw; LEWY, Miroslaw; PIECHOWIAK, Zbigniew

Dilatation of the cervical canal in the interruption of pregnancy  
by means of modified active dilator of Sobieranski. Gin. polska  
32 no.2:245-250 '61.

1. Z I Kliniki Polonictwa i Chorob Kobiecych A.M. w Lodzi Kie-  
rownik: prof. dr J. Sieroszewski  
(ABORTION THERAPEUTIC)

**CONTINUOUS AND PROGRESSIVE MODE**

A-1

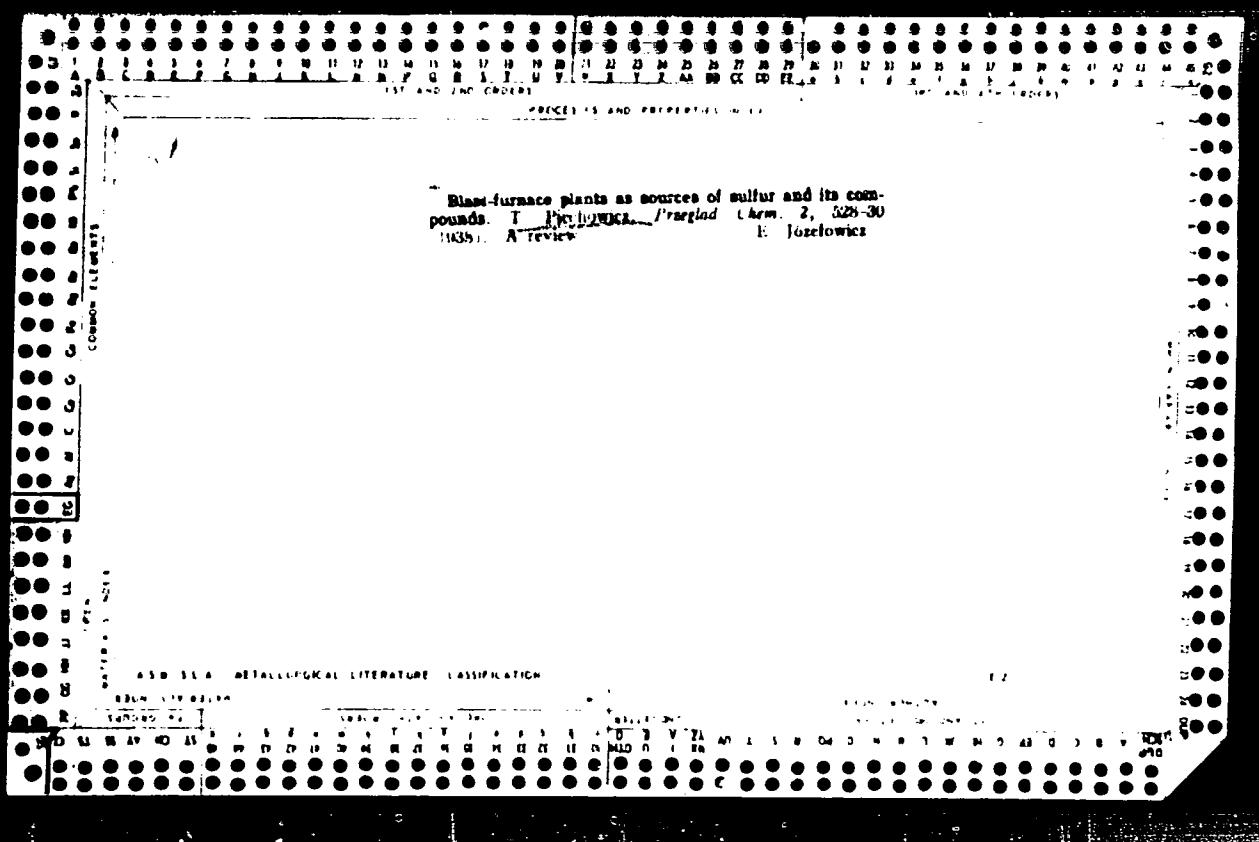
9

Influence of concentration on the velocity of sedimentation of suspensions. T. Kraszewicz (Przegreg) says, *Acta Phys. Chem.* 23, 23-30. The measured velocities and concentrations of 0.001-0.05% suspensions of  $\text{CaCO}_3$  and  $\text{Al}_2\text{O}_3$  are in good agreement with those calculated from the theoretical formulae  $v = \frac{1}{2}(\frac{1}{\rho_1} - \frac{1}{\rho_2})(\frac{1}{\rho_1} + \frac{1}{\rho_2})^2 \times (\frac{1}{\rho_1} + \frac{1}{\rho_2} - 1)/k$ , where  $v$  is the radius of the particles,  $\rho_1$  and  $\rho_2$  the  $\rho$  of the solution and liquid phases, respectively;  $k$  the constant,  $\text{dL}/\text{g}$ , which depends on  $\eta$  as a constant. The above theoretical equations apply to suspensions of  $\text{SiO}_2$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CaCO}_3$ , R. T.

#### 1.2.1.2. EXTRAMENTAL LITERATURE CLASSIFICATION

17-2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

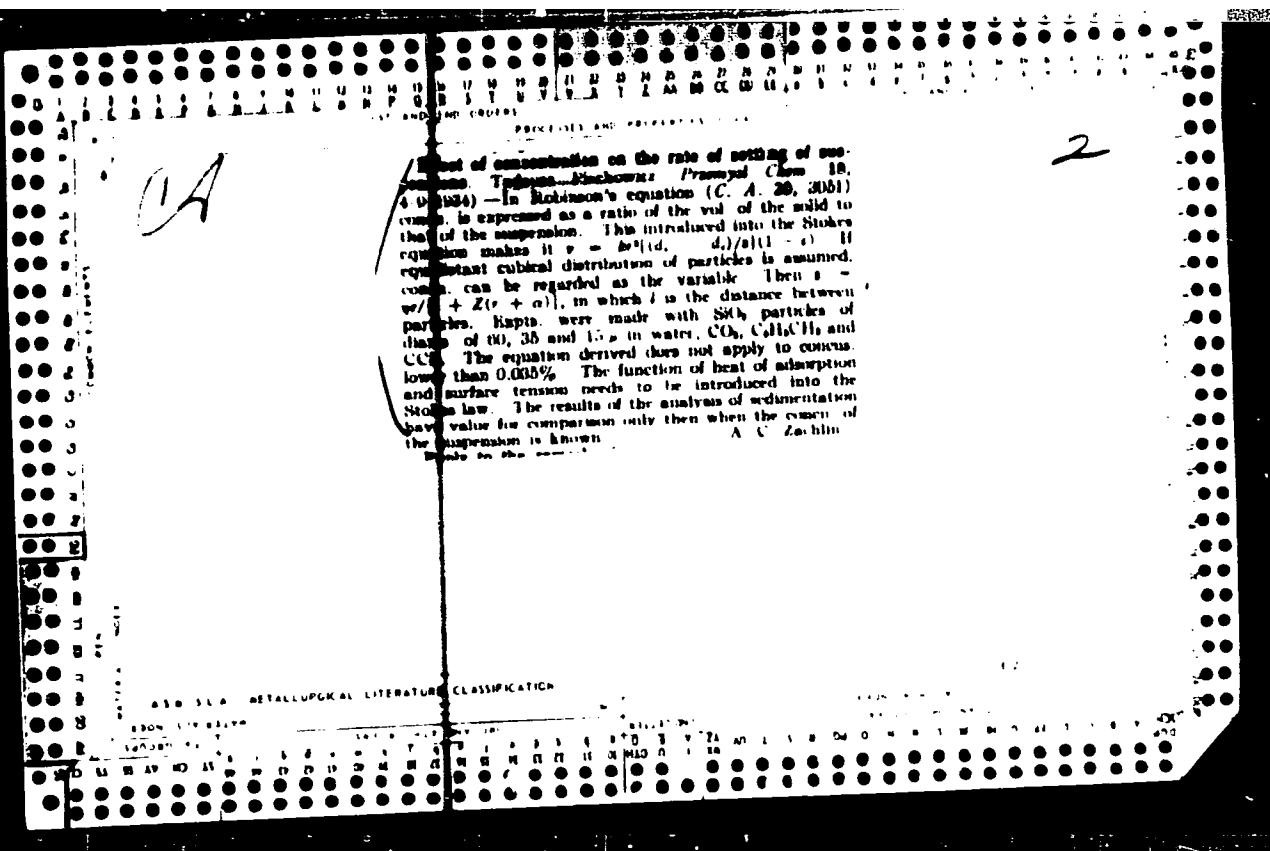


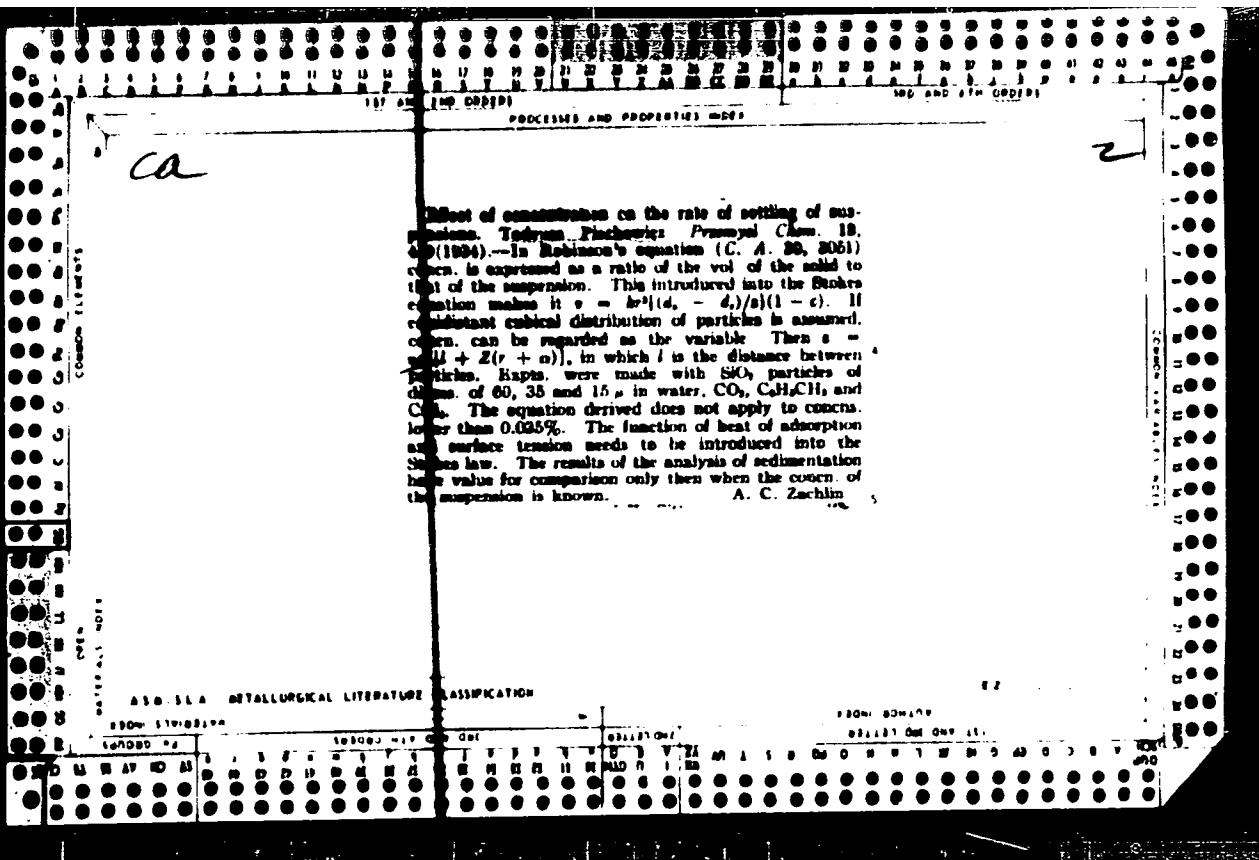
Mechanism of hydration of langbeinite  
Pechhold, Proc Roy Soc 10, 106-110, 1926  
The process of hydration of langbeinite consists of 2 stages involving soln of langbeinite to yield a supersaturated soln which later crystallizes. Covering of the surface by hydrated products can be avoided by agitating the soln. The supersaturated soln can, when sufficiently stable, be separated from the raw material by filtration or decantation and yields pure crystal products. K<sub>2</sub>SO<sub>4</sub> free from insol impurities was obtained from langbeite treated by this method. The rate of soln of langbeinite in satd solns is a function of temp and is represented by curves with a max at 25° (equil of schorlom, K<sub>2</sub>SO<sub>4</sub> 7H<sub>2</sub>O) or at 60° (schorlom, K<sub>2</sub>SO<sub>4</sub>). A math theory of continuous soln is given.

**Utilisation of blast furnace slag as fertilizer** [See also  
Proceedings, Preprint Chem. Inst. U.S.S.R., Vol. 10, No. 1, 1958, p. 100-102.]  
The results of the investigations on the utilization of slag in the neutralization of acid soils are discussed. The optimum doses of slag for various twenty-five-year-old soils are determined.

## 1910-1914 METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408





"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

PIECHOWSKA,  
M

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

PIECHOWSKA, M.J.

Effect of ionizing radiation on the endocrine system in insects.  
Bull. Acad. Pol. Sci. (Mol) 13 no.3:139-144 '65.

1. Submitted January 7, 1965.

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

Spalding, Maria L.

Employees in Mexico. Economic and Social Conditions

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

CHOJNACKI, T; PIECHOWSKA, Maria J.

Biosynthesis of phospholipids in insects. I. Incorporation of phosphocholine -P32 into phospholipids in Celerio euphorbiae. Acta biochim. polon. 8 no.2:157-165 '61.

1. Zaklad Biochemii Ewolucyjnej, Instytut Biochemii i Biofizyki PAN,  
Warszawa

(PHOSPHOLIPIDS metab)  
(CHOLINE rel cpds)  
(PHOSPHATES metab)  
(INSECTS metab)

SZER, Włodzimierz; PIECHOWSKA, Mirosława

Application of activated carbon of the Carbopol type in  
the purification of aqueous extracts in the erythromycin isolation  
process. Przem chem 39 no.1: 26-28 Ja '60.

1. Instytut Antybiotykow, Warszawa

PIECHOWSKA, Mirosława, mgr., asystent

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408  
On the chemistry of tetracycline antibiotics. Przem chem 12 no.12:  
779-794 D '60.

1. Zakład Technologii, Instytut Antybiotykow, Warszawa.

PIECHOWSKA, Miroslawa; SHUGAR, D.

Fractionation of native and heat denatured transforming DNA  
by chloroform treatment. Acta biochim. polon. 10 no.3:263-277  
'63.

1. Institute of Biochemistry and Biophysics, Polish Academy  
of Sciences, Warszawa.  
(DNA) (CHLOROFORM) (HEAT) (CHEMISTRY, ANALYTICAL)  
(DNA, BACTERIAL) (STREPTOCOCCUS)

PIECHOWSKA, Miroslawa, mgr, asystent  
APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408  
Erythromycin. II. Wied. chem. 15 no.11:681-694 E '61.

1. Instytut Antibiotyków, Warszawa, ul. Staroscinska 5.

PAKULA, Roman; PIĘCIOWSKA, Miroslawa; BANKOWSKA, Edmund; WALCZAK, Włodzimierz

A characteristic of DNA mediated transformation systems of two streptococcal strains. Acta microbiol. polon. 11 no.3:205-212 '62.

1. From the Department of Bacteriology, State Institute of Hygiene, Warsaw.

(DNA, BACTERIAL) (STREPTOCOCCUS)

OSTROWSKA-KRYSIAK, Barbara; PIECHOWSKA, Miroslawa; WOLF, Jadwiga

Selection of a nitrogen source during the process of erythromycin biosynthesis. Med.dosw.mikrob. 13 no.2:159-165 '61.

1. Z Instytutu Antybiotykow w Warszawie.

(ERYTHROMYCIN chem) (STREPTOMYCES culture)

PIECHOWSKA, Miroslawa; OSTROWSKA-KRYSIAK, Barbara

Studies on conditions for paper chromatography of erythromycin. Med.  
dosw.mikrob. 13 no.2:167-172 '61.

1. Z Instytutu Antybiotykow w Warszawie.

(ERYTHROMYCIN chem)

PIECHOWSKA, Miroslawa, asystent

Erythromycin I.; its chemical structure. Wiad chem 15 no.10:619-636  
'61.

1. Instytut Antibiotykow, Warszawa.

(Erythromycin)

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

July

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

OSTROWSKA-KRYSIAK, Barbara; WOLF, Jadwiga; PIENCHOWSKA, Mirosława; BORENSZTAJN,  
Dawid, oraz wspol. tech. Teresa Kolasa

Studies on production of erythromycin. Med. dosw. mikrob. 10 no.2:  
165-174 1958.

1. Z Zakładu iotyków PZH w Warszawie.  
(ERYTHROMYCIN, preparation of,  
fermentation technic (Pol))

PIECHOWSKA, Mironawa; OSTROWSKA-KRYSIAK, Barbara; WOLF, Jadwiga; BORIENSTAJN,  
David; Wspolpr. tech. Teresa Kolasa

Studies on production of erythromycin: chemical and analytical parts.  
Med. dosw. mikrob. 10 no.2:175-183 1958.

1. Z Zakladu Antybiotykow PZH w Warszawie.  
(ERYTHROMYCIN, preparation of.  
chem. & analytic aspects (Pol))

CP PIECHOWSKA, M

17

Action of formaldehyde on nonsterile solutions of penicillin and on filtrates from *Penicillium* cultures. M. Piechowska. Państwowy Zakład Higieny, Warsaw, Poland. *Medykina Dobroczadzna i Akademicka* 4, No. 1, 55-70 (1952). - Nonsterile filtrates of *Penicillium* with 0.1% of HCHO/100 ml. of soln., can be stored for 1 day at room temp. with less than 10% loss; a soln. contg. 1000 units of amorphous penicillin/ml. can be stored for 4 days under the same conditions; and a soln. contg. 1000 units of cryst. penicillin/ml. can be stored for 6 days. The effect of HCHO is reduced with a 0.001 M phosphate buffer at pH 7. HCHO inhibits penicillin-destroying and inhibiting microorganisms. I. Z. Roberts

HELLER, J.; CHOJNACKI, T.; PIBCHOWSKA, Maria J.

In the Hawk-moth celerio euphorbiae. Acta biochim.polon. ?  
no.2/3:187-192 '60.

1. Department of Evolutionary Biochemistry, Institute of  
Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw.  
(PYROPHOSPHATES metab)  
(INSECTS metab)

PIECHOWSKA, M.

Pyrophosphates in copulation in Celerio euphorbiae. Acta  
biochim. polon. 3 no.4:547-556 1956.

l. Z Pracowni Biochemii Ewolucyjnej Zakladu Biochemii PAN w  
Warszawie Kierownik Pracowni: prof. dr. Irena Mochnacka.  
(MOTHS,

Celerio euphorbiae, pyrophosphates before & after  
copulation (Pol))  
(PYROPHOSPHATES, metabolism,  
Celerio euphorbiae before & after copulation (Pol))

PIECHOWSKA, M.

Isolation of the enzyme responsible for keratolysis. Acta  
microb. polon 5 no.1-2:57-64 1956.

1. From the Institute of Plant Physiology of the Warsaw University.  
(BACILLUS,  
isolation of kerolytic enzymes)  
(STREPTOMYCES,  
same)  
(ENZYMES,  
kerolytic enzymes, isolation in Bacillus & Streptomyces)

PIECHOWSKA, Wanda; PILAWSKI, Andrzej. dr.

Effect of roentgen rays on the size of peripheral red blood cells in mice. Acta physiol. Pol. 16 no.2:235-238 Mr-Ap'65.

1. Katedra Fizyki Lekarskiej Akademii Medycznej w Poznaniu  
(Kierownik: dr. A. Pilawski).

FALECKI, Julian, mgr inz.; FILCHOWSKI, Leszek, mgr inz.

Design and testing of a rotating piston engine. Inst lotn  
prace no. 21:38-58 '63.

PIECHOWSKI, Michal

Molecular taxonomy of bacteria and the basic problems of biology.  
I. Genetico-molecular principles. Wiad botaniczne 6 no.1:3-23 '62.

PIECHOWSKI, Michal

Molecular taxonomy of bacteria and the basic problems of biology.  
Pt. 2. Mechanism of the transfer of information. Wiadom botan 6  
no.2:161-174 '62.

PIECHOWSKI, M.; NOWACKI,E.

Enzymatic oxidation of sparteine. Bul Ac Pol biol 7 no.5:165-168 '59.  
(EEAI 9:7)

1. Physiological Laboratory, Institute of Plant Breeding (Poznan),  
Polish Academy of Sciences. Presented by S.Barbacki.

(ENZYMES)

(SPARTEINE)

PIECHUCKI, Zbigniew; RDZANEK, Jerzy

General beta-radioactivity of some domestic food products of vegetable origin. Preliminary communication. Acta pol. pharm. 1<sup>o</sup> no.1:37-44 '61.

1. Z Wojskowego Instytutu Higieny i Epidemiologii w Warszawie.  
(FOOD) (RADIOACTIVITY)

PIECHUCKI, Z.

The problem of the radioactivity of water and sewage. p. 210

GAZ, WODA I TECHNIKA SANITARNA (Stowarzyszenie Naukowo-Techniczne Inżynierów i Techników Sanitarnych, Ugrzewnictwa i Gazownictwa) Warszawa, Poland.  
Vol. 33, no. 5, May 1959

Monthly List of East European Acquisitions (EEAI) LC, Vol. 8, no. 9, September 1959  
Uncl.

A - 3

*BC*

Further stereochemical details. Optical resolution of diphenoxydiphenylmethane acids. W. Paudler and J. Sauer (Can. J. Chem.) 1964, 42, 455-470. — *In*-CH<sub>2</sub>-CO<sub>2</sub>H (I) (m.p. 125-126°, prop.) is converted into the (+)-salt, m.p. 120-125°, [α]<sub>D</sub> +230° (decomp.), m.p. 170-175° (decomp.), [α]<sub>D</sub> +230° (decomp., m.p. 177°, [α]<sub>D</sub> +230°), and the enantiomeric salt (10%), m.p. 97°, [α]<sub>D</sub> +230°, and the bisimide (III), m.p. 120-125°, [α]<sub>D</sub> +215° (0.1-methylethylene salt), m.p. 157-160°, [α]<sub>D</sub> +170-2°. (II) is obtained by crystallizing a mixture of (I) and (III) from AcOH. Oxidation (H<sub>2</sub>O<sub>2</sub>-AcOH) of (II) yields (+)-M+, *P*(=O)(CH<sub>2</sub>)<sub>5</sub>CO<sub>2</sub>H (IV), m.p. 140-145°, [α]<sub>D</sub> +215°, directly; and the (-)-M+, isomeric, [α]<sub>D</sub> +215°, from (V), m.p. 120° (decomp.), [α]<sub>D</sub> +195°, crystallized from the mother-liquor. Similarly (III) yields the (-)-M-, isomeric, (VI), m.p. 122-125° (decomp.), [α]<sub>D</sub> -150-5°, and the (+)-M-, isomeric (VII), m.p. 120° (decomp.), [α]<sub>D</sub> -177-2°. Equimolar amounts of

(IV) and (V) in EtOH-CHCl<sub>3</sub> give the (+)-isomeric (VIII), [α]<sub>D</sub> +204-4°; similarly (VI) and (VII) yield the (-)-isomeric (IX), [α]<sub>D</sub> -206-9°. (VIII) and (IX) exist in solution only. The (+)-isomeric, m.p. 125-137° (decomp.), [α]<sub>D</sub> +110°, is obtained from (IV) and (VII) and the (-)-isomeric, m.p. 125-137° (decomp.), [α]<sub>D</sub> -117°, from (V) and (VI). A racemic bisimide, m.p. 164-167° (decomp.), is obtained from EtOH solution of (IV) plus (V); another racemic, m.p. 125° (decomp.), is obtained from (VI) and (VII). Oxidation (H<sub>2</sub>O<sub>2</sub>-AcOH) of (II) or (IV) yields the corresponding quinone compound, m.p. 180-187° (decomp.), [α]<sub>D</sub> +107-6°, which reacts in CO<sub>2</sub> to the tractive acid, m.p. 161-165° (decomp.). All values of [α] are in EtOH-CHCl<sub>3</sub>, (1 : 1 vol).

F. N. W.

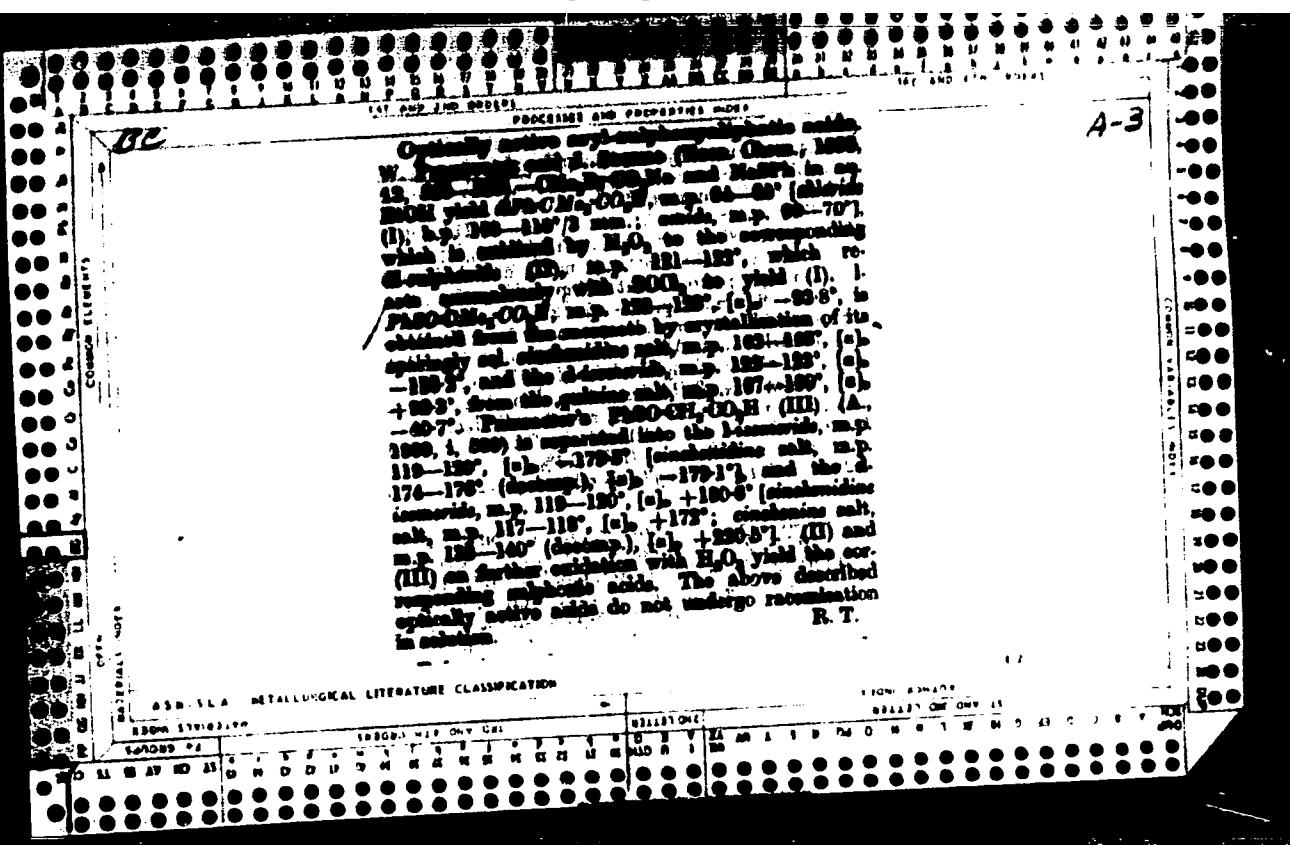
## ASD-11A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED

SEARCHED INDEXED SERIALIZED FILED

Optically active malic acid, m.p. 120°, is obtained from the above salt by treatment with  $\text{H}_2\text{O}_2$ . The salt is heated at 120° for 1 hr., then dissolved in 10%  $\text{NaOH}$  and extracted with ether. The ether solution is washed with  $\text{H}_2\text{O}_2$  (10%) until the aqueous layer is colorless. The ether solution is dried over  $\text{CaH}_2$ , then concentrated to yield 120 g. of a white solid, m.p. 120°, which is soluble in  $\text{H}_2\text{O}$  and  $\text{CHCl}_3$ , but insoluble in  $\text{CH}_2\text{Cl}_2$  and  $\text{C}_6\text{H}_6$ . This product is titrated with  $\text{NaOH}$  to determine the percentage of optically active acid. The remaining ether solution is dried over  $\text{CaH}_2$ , then concentrated to yield 100 g. of a white solid, m.p. 120°, which is soluble in  $\text{H}_2\text{O}$  and  $\text{CHCl}_3$ , but insoluble in  $\text{CH}_2\text{Cl}_2$  and  $\text{C}_6\text{H}_6$ . This product is titrated with  $\text{NaOH}$  to determine the percentage of optically active acid.

R. T.



Poland/Electricity - General Problems, G-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34981

Author: Pieczerak, A.

Institution: None

Title: New Development of Vacuum-Tube Megohmmeter

Original  
Periodicals Prace Przemysł.-inst. telekomun. 1956, 6, No 17-18, 81-82; Polish

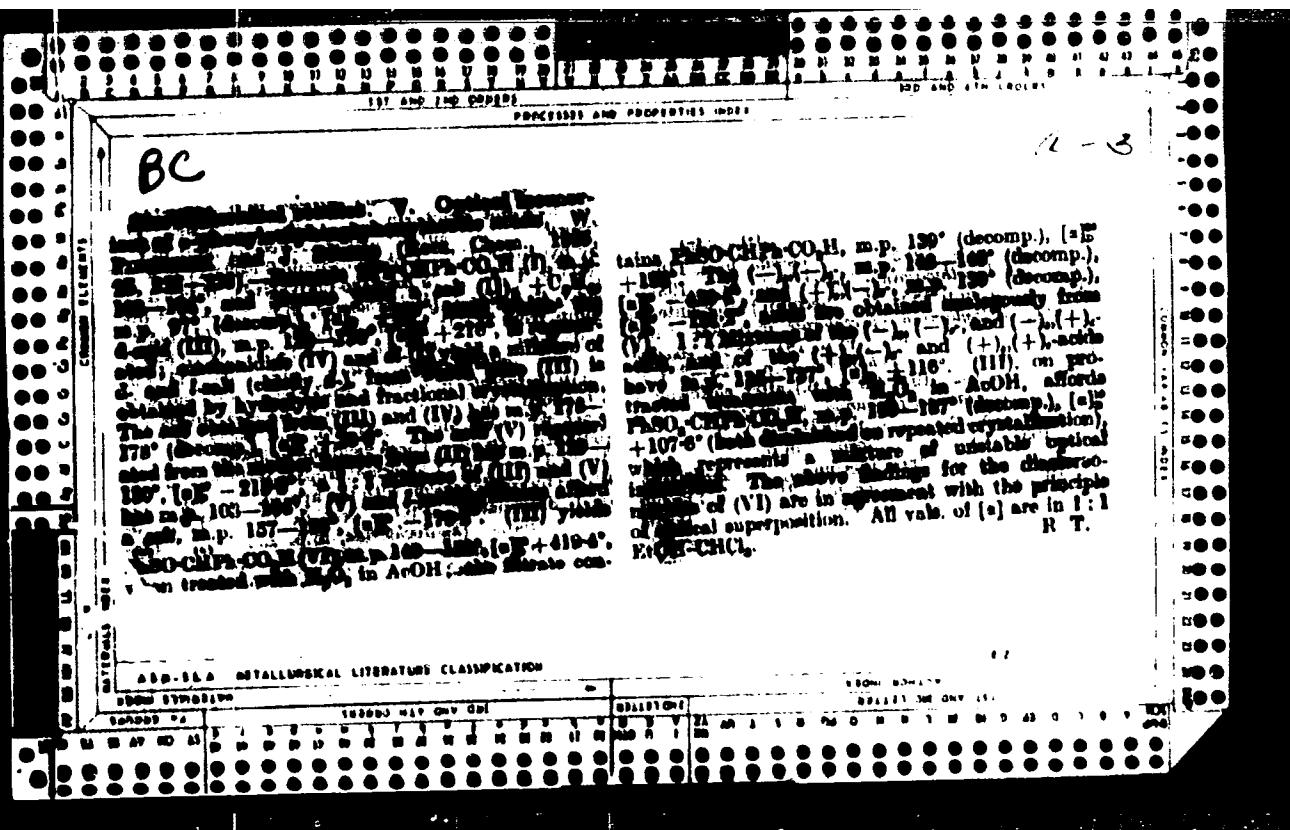
Abstract: None

Card 1/1

**Further stereochemical studies.** Optical isomerism of the  $\alpha$ -phenylsulfonylphenylacetic acids. W. F. Bruce and J. Suzuki. *Bull. intern. acad. polonaise, Classe Sci. math., nat.* 1934A, 425-70. - Resolution of *d*- $\alpha$ -phenylsulfonylphenylacetic acid, m. 103.4° (cf. *C. A.* 26, 350), by means of brucine or cinchonidine in  $\text{CHCl}_3$ , yielded the (+)-optical antipode (I),  $\text{C}_9\text{H}_7\text{NO}_3\text{S}$ , m. 129.30°,  $[\alpha]_D^{25} +55.216^\circ$ . The brucine salt,  $\text{C}_{10}\text{H}_{10}\text{N}_2\text{O}_3\text{S}$ , m. 97°,  $[\alpha]_D^{25} +55.216^\circ$ , in 1.1 ek.  $\text{CHCl}_3$ ; the cinchonidine salt,  $\text{C}_{12}\text{H}_{14}\text{NO}_3\text{S}$ , m. 178° (decompn.),  $[\alpha]_D^{25} +10.4^\circ$ . From the mother liquor the (-)-antipode (III) was secured by crystallization from  $\text{HOAc}$ , m. 126.30°,  $[\alpha]_D^{25} -215.6^\circ$ ; (-)-menthylamine salt,  $\text{C}_{11}\text{H}_{12}\text{NO}_3\text{S}$ , m. 157.8°,  $[\alpha]_D^{25} -170.2^\circ$ . Cautious oxidation of I by 30%  $\text{H}_2\text{O}_2$  gave the optically active form with both asym. centers (SO group and C atom) +, (+), (+)- $\alpha$ -phenylsulfonylphenylacetic acid (III),  $\text{C}_9\text{H}_7\text{NO}_3\text{S}$ , m. 149.50° (decompn.),  $[\alpha]_D^{25} +19.4^\circ$ . The mother liquor from III gave (-), (+)- $\alpha$ -phenylsulfonylphenylacetic acid (IV),  $\text{C}_9\text{H}_7\text{NO}_3\text{S}$ , m. 139° (decompn.),  $[\alpha]_D^{25} +195.0^\circ$ . Oxidation of II in  $\text{HOAc}$  gave (-), (-)- $\alpha$ -phenylsulfonylphenylacetic acid (V), recrystd. from ak. m. 148.0°,  $[\alpha]_D^{25} -420.4^\circ$ . In the  $\text{HOAc}$  mother liquor was found (+), (-)- $\alpha$ -phenylsulfonylphenylacetic acid (VI), m. 139° (decompn.),  $[\alpha]_D^{25} -191.2^\circ$ . Equal amounts of III and V gave the inactive racemic mixt., m. 146.7° (decompn.); the corresponding mixt. of IV and VI m. 135° (decompn.). Equal amounts of III and IV in ak.  $\text{CHCl}_3$  gave a half-racemate,  $[\alpha]_D^{25} 304.4^\circ$ , likewise V and VI gave a half-racemate,  $[\alpha]_D^{25} -306.9^\circ$ . Both half-racemates exist only in soln.; their optical activity is due only to the asym. C. The corresponding half-racemates with optical activity due only to the sulfonamide were prep'd. from III and VI, IV and V,  $[\alpha]_D^{25} +116^\circ$ . By soln. of III, IV, V or VI in 1%  $\text{NaOH}$ , immediate racemization of the active C occurs and the half-racemates III and VI or IV and V are formed, from which by crystallization from dil. ak. III or V can be obtained by spontaneous resolution. With 2 moles  $\text{H}_2\text{O}_2$ , I and III give  $\alpha$ -phenylsulfonylphenylacetic acid,  $\text{C}_9\text{H}_7\text{NO}_3\text{S}$ , m. 161.3° (decompn.), largely racemized by recrystn. These results agree with van't Hoff's principle of optical superposition. W. F. Bruce

W. F. Bruce

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408



10

Optically active allylbenzyl fatty acids. Warsaw  
Puchalski and Jozef Szwarc. Roczniki Chem. 13, 520-4  
(1933) (in German 529). Phenylmethylmethyldipropionic acid  
(I) is obtained by mixing 40 g.  $\text{Me}_2\text{CBr}(\text{CO}_2\text{H})$  in 100 cc.  
alc. (cooled on ice) and 10 g. NaOH (mid. soln.) with  
28 g. PhSH in 110 cc. alc. and 12 g. NaOH (50% soln.)  
It is kept on ice for several hrs., then at room temp. over  
night, refluxed 12 hrs., cooled to half, boiled 8 hrs.,稀  
with  $\text{H}_2\text{O}$  and acidified with  $\text{H}_2\text{SO}_4$ . Bttn. with ether  
and recryst. from  $\text{CHCl}_3$  gives 38 g. of crystals contg.  
0.5 mol.  $\text{CaH}_2$  and m. 63-6. Derivs. of I prepd. were:  
acid chloride (II), a yellow oil, m. 108-10°; amide, m.  
69-70°. Phenylmethylmethyldipropionic acid (III)  
is obtained by heating below 60° 4.8 g. of I in 10 cc. glacial  
 $\text{AcOH}$  and 3 cc. 30%  $\text{H}_2\text{O}_2$  (IV). The  $\text{AcOH}$  is removed,  
the residue dissolved in  $\text{CHCl}_3$ , and petr. ether added,  
the crystals m. 121-2° (3.3 g. yield). It is obtained from  
 $\text{SOCl}_2$  and III. I-III, cinchonidines salt, m. 102-3°.  $[\alpha]_D^{25}$   
-136.2°; I-III, m. 122-3°.  $[\alpha]_D^{25}$  -90.5°; d-III, quinine  
salt, m. 167-8°.  $[\alpha]_D^{25}$  -40.7°; d-III, m. 122°. Phenyl-  
methylmethyldipropionic acid (V) is obtained by heating 1 g.  
I-III in 7 cc. glacial  $\text{AcOH}$  on a water bath with the addition  
of 1.6 cc. IV during the course of 2 hrs. The solvent is  
expelled and a brown oil, cryst. after moistening with  
 $\text{H}_2\text{O}$  and rubbing, is obtained, washed with  $\text{H}_2\text{O}$ , dried  
and recryst. from  $\text{CHCl}_3$ , it m. 146-7° (yield 47%).  
Et ester of V, from II, abs. alc. and IV, m. 39-40°. Phenyl-  
butyric acid (VII), m. 119-20°.  $[\alpha]_D^{25}$   
-170.5°; cinchonidines salt, m. 174-6° (decomp.),  
 $[\alpha]_D^{25}$  -179.1°; d-VII, m. 119-20°.  $[\alpha]_D^{25}$  180.6°, was  
also obtained from its cinchonine salt, m. 158-40° (de-  
comp.).  $[\alpha]_D^{25}$  220.5°. Optical rotations were deid.  
with c = 1 and the solvent  $\text{CHCl}_3 + \text{EtOH}$  (2 + 1).

C. T. Ichniowski

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Optically active aryl methoxy fatty acids. *Acetum Chem.* 13, [23]-4  
Pfeiffer and Jerry Sunao. (in German 629). Phenylhydroxymethylglycolic acid and  
(I) is obtained by raising 40 g. Me<sub>3</sub>C<sub>2</sub>H<sub>5</sub>CO<sub>2</sub>H in 100 cc.  
alc. (cooled on ice) and 10 g. NaOH (acid. soln.) with  
25 g. PbSH in 110 cc. alc. and 12 g. NaOH (50% aq.) with  
it is kept on ice for several hrs., and 12 g. NaOH (50% aq.) with  
light, refluxed 12 hrs., cooled to half, boiled at room temp. over-  
with H<sub>2</sub>O and acidified with H<sub>2</sub>SO<sub>4</sub>. Evap. with ether,  
and recryst. from C<sub>6</sub>H<sub>6</sub> gives 36 g. of crystal. const.  
0.5 mol. C<sub>6</sub>H<sub>6</sub> and m. 68°. Deriv. of I prep. were  
acid chloride (II), a yellow oil, m. 108°-10°; amide, m.  
69-70°. Phenylsulfidomethylglicolic acid (III) is  
obtained by keeping below 60° 4.8 g. of I in 10 cc. glacial  
AcOH and 3 cc. 30% H<sub>2</sub>S (IV). The AcOH is removed,  
the residue dissolved in CHCl<sub>3</sub>, and PtC added.  
The crystals m. 121°-2°. H<sub>2</sub>S (V) is obtained from  
SOCl<sub>2</sub> and III. -III (sulfidomethylglicolic acid, m. 102°-3°, [α]<sub>D</sub>  
-130.2°, -I-III, m. 122-3°, [α]<sub>D</sub>  
-60.8°, -II-III, m. 122°, [α]<sub>D</sub>  
-59.8°, -III gummy  
sulfidomethylacetic acid (V) is obtained by heating I g.  
-III in 7 cc. glacial AcOH on a water bath with the addn.  
of 1.6 cc. IV during the course of 2 hrs. The solvent is

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expelled and a brown oil, cryst. after moistening with H<sub>2</sub>O and rubbing, is obtained, washed with H<sub>2</sub>O, dried and recrystd. from C<sub>6</sub>H<sub>6</sub>, m. 140-7° (yield 47%). L-  
Et ester of V, from II, abe. alk. and IV, m. 89-90°. L-  
Phenylchloroacetic acid (VII), m. 110-20°, [α]<sub>D</sub>  
-170.5°; methanesulfonate salt, m. 174-8° (decompn.),  
[α]<sub>D</sub> -179.1°; d-VII, m. 119-20°, [α]<sub>D</sub> 180.6°, was  
best obtained from its camphorine salt, m. 128-40° (de-  
compn.), [α]<sub>D</sub> 220.8°. Optical rotations were detd.  
with c = 1 and the solvent CHCl<sub>3</sub> + EtOH (2 + 1).  
C. T. Ichniowski

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1. Zjednoczenie Przemyslu Cementowego, Sosnowiec, (for Szygocki  
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Pieczara). 3. Najwyższa Izba Kontroli, Delegatura Katowice  
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Poland/Chemical Technology - Chemical Products and Their  
Application. Ceramics. Glass. Binding Materials.  
Concretes.

H-13

Abs Jour : Ref Zhur - Khimiya, No 17, 1958, 58230

Author : Pieczara Stefan

Inst :

Title : Belite Cement.

Orig Pub : Cement. Wapno. Gips, 1958, 14, No 1, 9-11

Abstract : Since belite cement is the most useful for the production of porous concrete, the output of clinker with a C<sub>2</sub>S content of 62% is utilized in the Beykherovo Cement Plant. Firing is done in a furnace 2.4/2.0 x 35 m. The weight of 1 kg of clinker is 1426 g; the silicate modulus comprises 3.06, alumina 2.0, KH 0.72. The cement has the normal hardening period and answers all other standard demands. In solutions of a ductile consistency it attained rigidity in 28 days in a test; bending

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Pizzara, Stefan

Belite cement. Sidor, Mervac. Cement-Wapno-Gips  
14(23), 9-11(1958). A rolled cement mill in Wejherowo is  
producing belite cement since September 1957. The  
clinker weighs 1420 g./l., its silicate modulus is 3.00, Al  
modulus is 2.00, and Kind modulus 0.72. Its mineralogical  
composition is:  $3\text{CaO}\cdot\text{SiO}_4$  (I) 15.19,  $2\text{CaO}\cdot\text{SiO}_4$  (II) 62.17,  
 $3\text{CaO}\cdot\text{Al}_2\text{O}_5$  10.54,  $4\text{CaO}\cdot\text{Al}_2\text{O}_5\cdot\text{Fe}_2\text{O}_3$  8.87, and  $\text{CaSO}_4$   
0.22%. The ratio of I/II is 0.25. F. J. Hendel

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